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# INFORMATION REPORT

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THIS IS UNEVALUATED INFORMATION 25X1

25X1 1. types of wave guide constructed at Institute 160 for use in test equipment associated with magnetron and klystron 25X1

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25X1 The project with which the wave guide for 1 meter was concerned was highly classified,

25X1 the wave guide was intended for high power 25X1

applications, probably in the vicinity of 1 megawatt peak. 25X1

25X1 The 5 cm wave guide, of which there was a quantity on hand, at least sufficient for all laboratory purposes, was used in the development of two klystron types tuneable from 4.5 to 6 cm. Each of the two types is a scaled-down version of the American type 2K28 10 cm klystron. One of the types utilized, a cylindrical resonator, was rapidly approaching

25X1 the production stage 1952. This type was prone to mode jumping; however, it predicated a development project on

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the second version which is to utilize a pyramidal shaped resonator with two coupled cavities. This second type is expected to minimize mode jumping, but is still in the early development stage.

Some preliminary work was done in 1952, Parishnikova, a Soviet female engineer who was assisted by another woman, Shnept, was working on this development under Kovalenko's supervision.

an institute in Moscow was attempting the development of a high power klystron.

the Soviets plan to develop a series of receiver type klystrons to cover the entire range of 2 to 14 cm. It is logical to assume that magnetron development will be undertaken to cover the same portion of the spectrum, and that in all probability high power klystrons in this range will also receive development attention. No development work is being done on klystrons in the 1 cm region. some data on the 1 cm reflex klystron was contained in a signal generator obtained from an institute (name unknown) in Moscow in the early part of 1949. This tube used a cavity accelerating voltage of 1.5 kv, a beam current of 15 to 20 ma, and a repeller voltage of 500 to 800. The tuning range is estimated to be plus or minus 1/2 mw. the power output more nearly approaches 15 to 20 mw than 10 mw, as previously reported. The signal generator was rated at a power output of 50 mw, although nothing greater than 20 mw was ever obtained.

2. as the departure of the Germans from Institute 160 drew near, they were besieged with questions by the Soviets concerning the projects with which they had been associated. In some cases the requests for assistance extended to the actual departure date of the Germans.

The engineers directly concerned with the work on the various projects at Institute 160 asked pertinent technical questions up until the very day of our departure. The senior engineers or laboratory supervisors did not do so. the Soviets will be able, without great difficulty, to complete the projects under way when the Germans left. Further developments and original ideas henceforth are bound to be retarded by lack of German assistance, although the experience gained through the German engineers will certainly be of great value. The greatest advantage gained through the years of German assistance is a decided improvement in the Soviet engineers' ability to apply, in actual practice, the new ideas advanced in available western literature. Although highly prone to seek technological advancement based purely on information received from other countries, they have learned well how to apply these ideas to equipment. Quality as well as quantity is undoubtedly now receiving great emphasis in the electronics field. This fact was reflected in the samples of the Soviet K3 series klystrons received from Svetlana for testing at Institute 160. Tests on these klystrons (copy of the American 723 a/b) proved them to be at least as good as if not better than the American counterpart.